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# THE TIME-TRANSGRESSIVE SANAK-BARANOF PLUTONIC BELT, ALASKA: A TALE OF DIACHRONOUS TIMING OF FORE-ARC BURIAL AND PLUTON EMPLACEMENT

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The >2000 km long Paleocene and Eocene Sanak-Baranof belt of granitic plutons intrudes Upper Cretaceous to Paleocene turbidites and interbedded volcanic rocks of the Chugach-Prince William terrane (CPW) in southern and southeast Alaska. In the west the 63.1±0.9 Ma Sanak Island pluton with a primitive eHf(t) isotope signature of +9.3 intrudes the Upper Cretaceous Shumigan Formation that records a U/Pb detrital zircon maximum depositional age (MDA) of 73 Ma. Near the middle of the belt, intrusion ages are identical (within error) to the MDAs of the rocks they intrude with the 56.4±1.5 Ma Hive Island pluton (eHf=+5.1) intruding the Paleocene Orca Formation with a MDA of 57 Ma and the 54-53 Ma Mt. Draper pluton (eHf=+7.6) intruding the Schist of Nunatak Fjord with a MDA of 53 Ma. In southeast Alaska, the 53-47 Ma composite Crawfish inlet pluton intrudes the Cretaceous to Paleocene Sitka Greywacke and Baranof Schist with MDAs as young as 62 Ma and has Hf isotope ratios that vary systematically with age: eHf=+4.7 at 53 Ma and eHf=+13.7 at 47 Ma.

Collectively, Hf isotope ratios in the Sanak-Baranof belt evolve systematically from primitive signatures at 63 Ma to more evolved ratios at ~56-53 Ma and back to primitive ratios at 47 Ma. The timing of the most evolved Hf isotope signatures correlates well with the onset of rapid deposition and tectonic thickening of the CPW accretionary wedge complex associated with rapid exhumation of the (then adjacent) Coast Plutonic Complex. Taken together, these data suggest that rapid deposition and tectonic thickening in the CPW lead to widespread melting and assimilation of crustal melts into the Sanak-Baranof plutons at 56-53 Ma; however, based on surface exposure, there does not appear to be a correlation between melt production volume and time in the 63-47 Ma Sanak-Baranof plutonic belt.

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T138. Magmas Assemble! Petrologic, Geochemical, Chronologic, and Geophysical Insights into the Architecture and Timescales of Magmatic Systems
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